

THE CLAIMS

What is claimed is:

- 5 1. Light stable polyurethane compositions for golf balls comprising:
 at least one prepolymer comprising:
 at least one saturated low free isocyanate;
 at least one saturated polyol, and
 at least one saturated curing agent.
- 10 2. The polyurethane composition of claim 1, wherein the at least one saturated low
 free isocyanate comprises 1,6-hexamethylene diisocyanate.
- 15 3. The polyurethane composition of claim 1, wherein the at least one saturated
 polyol is selected from the group consisting of saturated polyether polyols,
 saturated polycaprolactone polyols, saturated polyester polyols, saturated
 polycarbonate polyols, saturated hydrocarbon polyols, aliphatic polyols, and
 mixtures thereof.
- 20 4. The polyurethane composition of claim 3, wherein the saturated polyether polyols
 are selected from the group consisting of polytetramethylene ether glycol, PTG-L,
 poly(oxyethylene) glycol, poly(oxypropylene) glycol, poly(ethylene oxide capped
 oxypropylene) glycol, and mixtures thereof.
- 25 5. The polyurethane composition of claim 1, wherein the at least one saturated
 curing agent is selected from the group consisting of hydroxy-terminated curing
 agents, amine-terminated curing agents, and mixtures thereof.
- 30 6. The polyurethane composition of claim 5, wherein the hydroxy-terminated curing
 agents are selected from the group consisting of ethylene glycol; diethylene
 glycol; polyethylene glycol; propylene glycol; 2-methyl-1,3-propanediol; 2-
 methyl-1,4-butanediol; dipropylene glycol; polypropylene glycol; 1,2-butanediol;
 1,3-butanediol; 1,4-butanediol; 2,3-butanediol; 2,3-dimethyl-2,3-butanediol;
 trimethylolpropane; cyclohexyldimethylol; triisopropanolamine; tetra-(2-

hydroxypropyl)-ethylene diamine; diethylene glycol di-(aminopropyl) ether; 1,5-pentanediol; 1,6-hexanediol; 1,3-bis-(2-hydroxyethoxy) cyclohexane; 1,4-cyclohexyldimethylol; 1,3-bis-[2-(2-hydroxyethoxy) ethoxy] cyclohexane; 1,3-bis-{2-[2-(2-hydroxyethoxy) ethoxy] ethoxy} cyclohexane; trimethylolpropane; polytetramethylene ether glycol; and mixtures thereof.

7. The polyurethane composition of claim 1, wherein the composition further comprises a catalyst selected from the group consisting of a bismuth catalyst, an oleic acid, triethylenediamine, di-butyltin dilaurate, acetic acid, and mixtures thereof.

8. The polyurethane composition of claim 1, wherein the prepolymer comprises low free 1,6-hexamethylene diisocyanate and polytetramethylene ether glycol, wherein the saturated curing agent comprises 1,4-butanediol, and wherein the composition further comprises di-butyltin dilaurate.

9. The polyurethane composition of claim 1, wherein the golf ball has an outermost layer, and wherein the composition is disposed within the outermost layer of the golf balls.

10. A golf ball comprising:

a core;

a layer disposed about the core forming a center; and

a cover cast onto the center, wherein the cover comprises a light stable

castable reactive liquid polyurethane material comprising a saturated diisocyanate, a dimerate polyester polyol, and at least one of a saturated hydroxy-terminated curing agent, a saturated amine-terminated curing agent, or a mixture thereof.

11. The golf ball of claim 10, wherein the saturated diisocyanate is selected from the group consisting of isophoronediiisocyanate, 4,4'-dicyclohexylmethane diisocyanate, 1,6-hexamethylene diisocyanate, or a combination thereof.

12. The golf ball of claim 10, wherein the saturated hydroxy-terminated curing agent

is selected from the group consisting of ethylene glycol; diethylene glycol; polyethylene glycol; propylene glycol; 2-methyl-1,3-propanediol; 2,-methyl-1,4-butanediol; dipropylene glycol; polypropylene glycol; 1,2-butanediol; 1,3-butanediol; 1,4-butanediol; 2,3-butanediol; 2,3-dimethyl-2,3-butanediol; trimethylolpropane; cyclohexyldimethylol; triisopropanolamine; tetra-(2-hydroxypropyl)-ethylene diamine; diethylene glycol di-(aminopropyl) ether; 1,5-pentanediol; 1,6-hexanediol; 1,3-bis-(2-hydroxyethoxy) cyclohexane; 1,4-cyclohexyldimethylol; 1,3-bis-[2-(2-hydroxyethoxy) ethoxy] cyclohexane; 1,3-bis-{2-[2-(2-hydroxyethoxy) ethoxy] ethoxy} cyclohexane; trimethylolpropane; polytetramethylene ether glycol; and mixtures thereof.

13. The golf ball of claim 10, wherein the material comprises 4,4'-dicyclohexylmethane diisocyanate, dimerate polyester polyol, and 1,4-butanediol.

14. The golf ball of claim 10, wherein the cover has a thickness of about 0.02 inches to about 0.35 inches.

15. A polyurethane composition for a golf ball comprising:

a saturated diisocyanate;

a hydroxy-terminated dimerate polyester polyol; and a

a saturated hydroxy-terminated curing agent.

16. The polyurethane composition of claim 15, wherein the hydroxy-terminated dimerate polyester polyol is aliphatic.

17. The polyurethane composition of claim 15, wherein the saturated diisocyanate is selected from the group consisting of isophoronediiisocyanate, 4,4'-dicyclohexylmethane diisocyanate, 1,6-hexamethylene diisocyanate, or a combination thereof, and wherein the saturated hydroxy-terminated curing agent is selected from the group consisting of ethylene glycol; diethylene glycol; polyethylene glycol; propylene glycol; 2-methyl-1,3-propanediol; 2,-methyl-1,4-butanediol; dipropylene glycol; polypropylene glycol; 1,2-butanediol; 1,3-butanediol; 1,4-butanediol; 2,3-butanediol; 2,3-dimethyl-2,3-butanediol; trimethylolpropane; cyclohexyldimethylol; triisopropanolamine; tetra-(2-

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hydroxypropyl)-ethylene diamine; diethylene glycol di-(aminopropyl) ether; 1,5-pentanediol; 1,6-hexanediol; 1,3-bis-(2-hydroxyethoxy) cyclohexane; 1,4-cyclohexyldimethylol; 1,3-bis-[2-(2-hydroxyethoxy) ethoxy] cyclohexane; 1,3-bis-{2-[2-(2-hydroxyethoxy) ethoxy] ethoxy} cyclohexane; trimethylolpropane; polytetramethylene ether glycol; and mixtures thereof.

18. The polyurethane composition of claim 17, wherein the saturated diisocyanate is 4,4'-dicyclohexylmethane diisocyanate and wherein the saturated hydroxy-terminated curing agent is 1,4-butanediol.